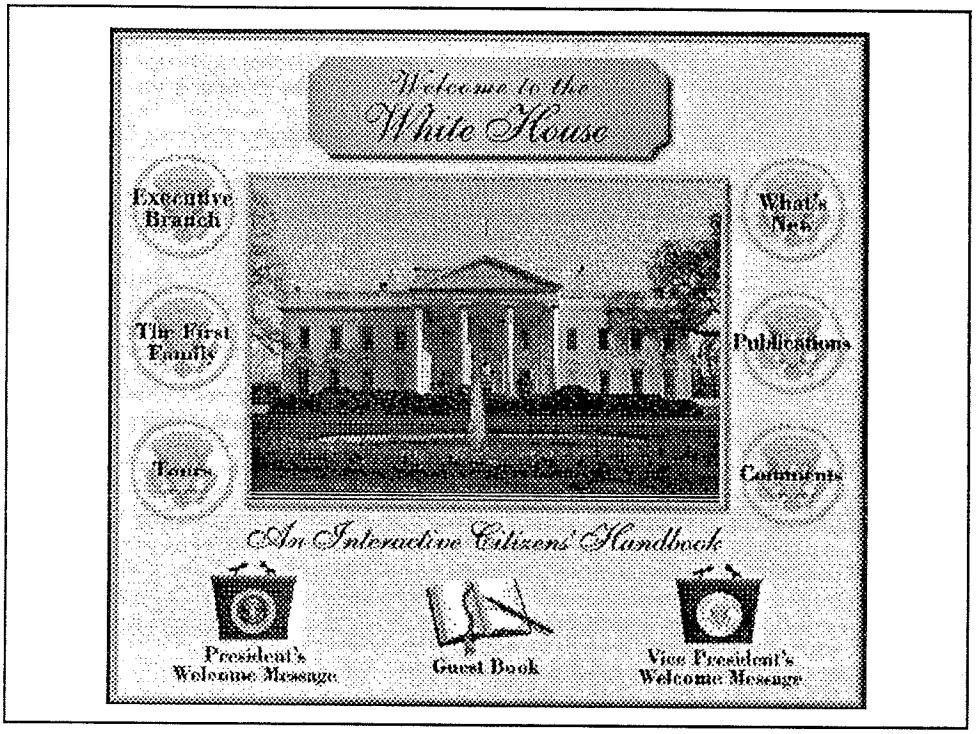
Government Information Locator Service (GILS) Overview

Eliot Christian

U.S. Geological Survey,
Department of the Interior

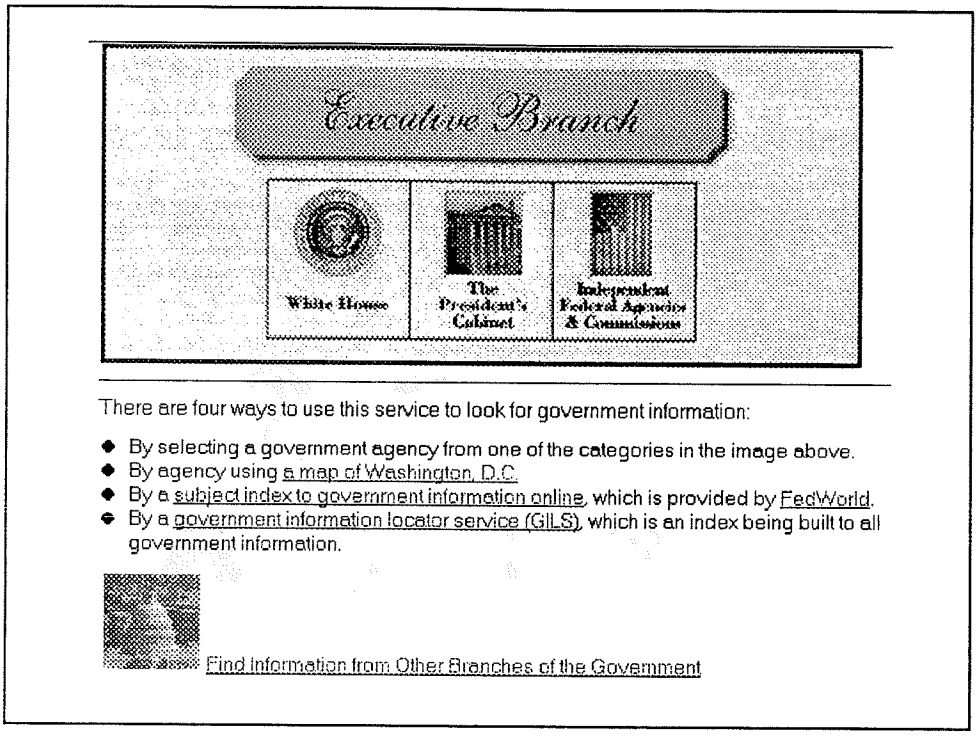
One way to begin looking for information located in many thousands of places across the Federal Government is to use the new "Interactive Citizens Handbook".

[Use Mosaic to go to "http://www.whitehouse.gov"]



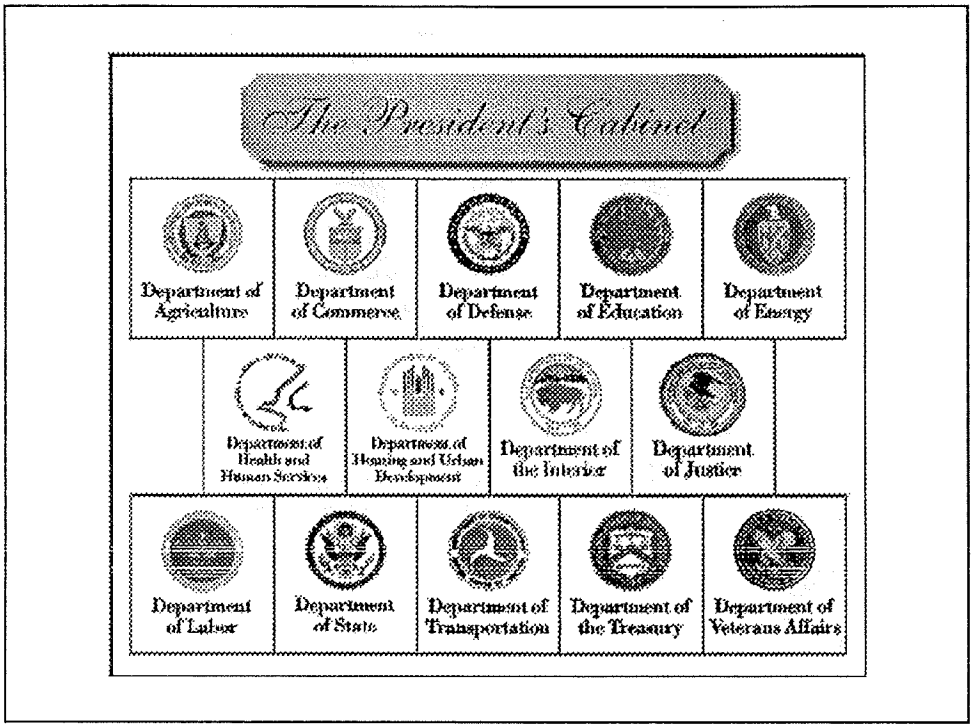
This facility acts as an electronic visitors center--it includes a variety of online services and also provides a high-level view of some information resources. From the White House "home page", we can select the "Executive Branch"...

[Click on "Executive Branch"]

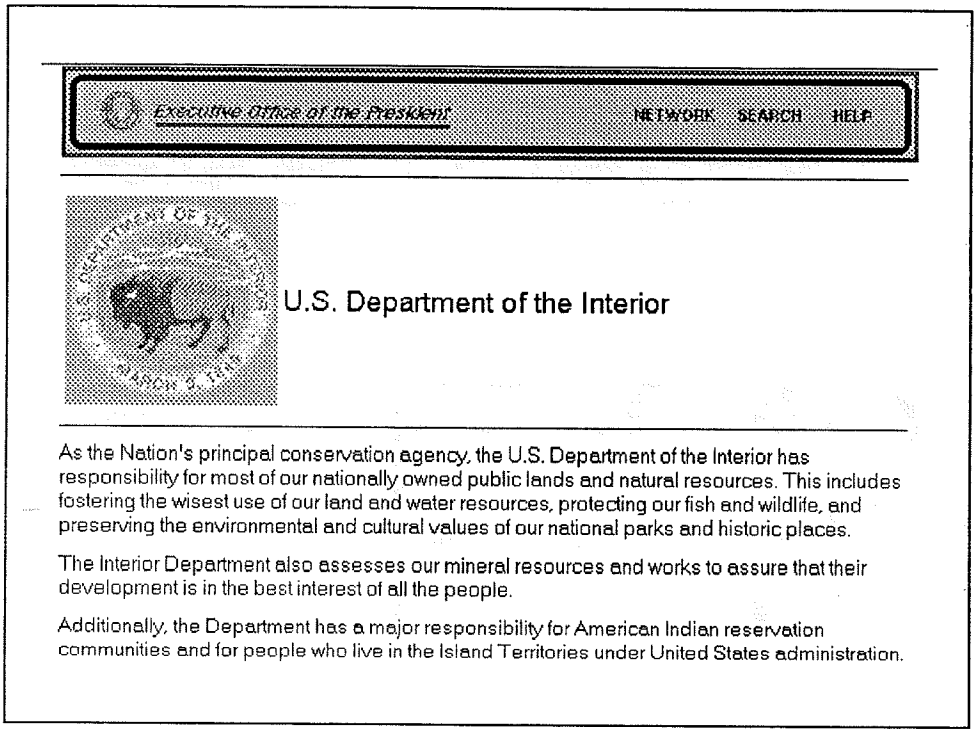


... and find that there are additional "electronic visitor's centers" for dozens of Federal agencies.

[Click on "The President's Cabinet"]

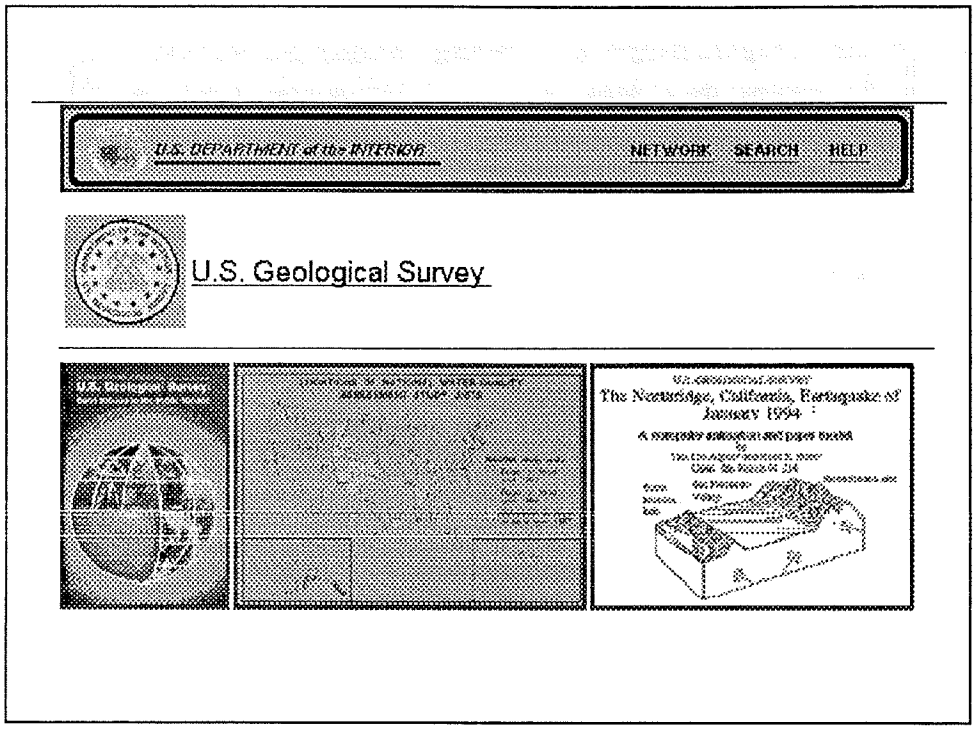


Selecting each of these,
[Click on "Department of the Interior"]



you would find many more dozens of agencies presenting themselves electronically--a web of interconnected brochures filled with useful information. In addition, Federal agencies make available a great variety of other public information locators, including walk-up kiosks, paper directories, telephone information centers, electronic bulletin boards, and networked information systems.

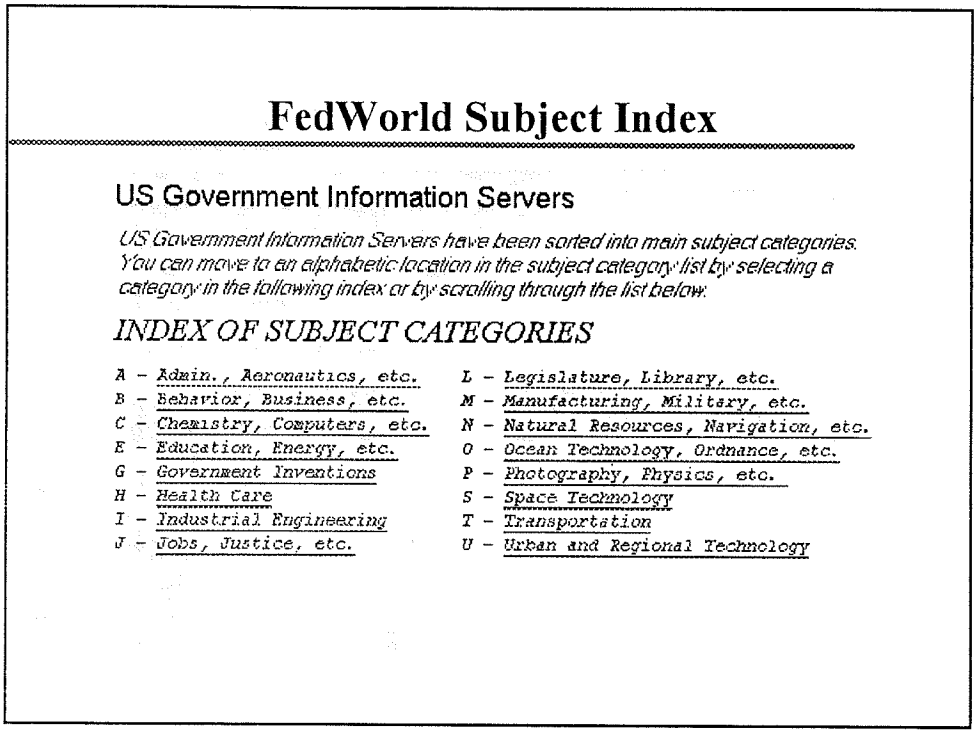
[Click on "U.S. Geological Survey"]



Often, though, you don't want to just window-shop in the "information shopping mall"--you want to get in and find a specific product.

[Return to "Executive Branch" page]

[Click on "subject index to government information online"]



FedWorld Subject Index

US Government Information Servers

US Government Information Servers have been sorted into main subject categories. You can move to an alphabetic location in the subject category list by selecting a category in the following index or by scrolling through the list below.

INDEX OF SUBJECT CATEGORIES

A - Admin., Aeronautics, etc.
B - Behavior, Business, etc.
C - Chemistry, Computers, etc.
E - Education, Energy, etc.
G - Government Inventions
H - Health Care
I - Industrial Engineering
J - Jobs, Justice, etc.
L - Legislature, Library, etc.
M - Manufacturing, Military, etc.
N - Natural Resources, Navigation, etc.
O - Ocean Technology, Ordnance, etc.
P - Photography, Physics, etc.
S - Space Technology
T - Transportation
U - Urban and Regional Technology

Here is one example of a subject index that is similar to the directory in a shopping mall. Yet, the information holdings of the Federal Government are so rich and varied that this kind of subject directory is not of much practical use. You would often find that the subject directory doesn't provide a listing for the specific kind of information you need.

[Return to "Executive Branch" page]

[Click on "government information locator service"]

Inventory of Information Resources

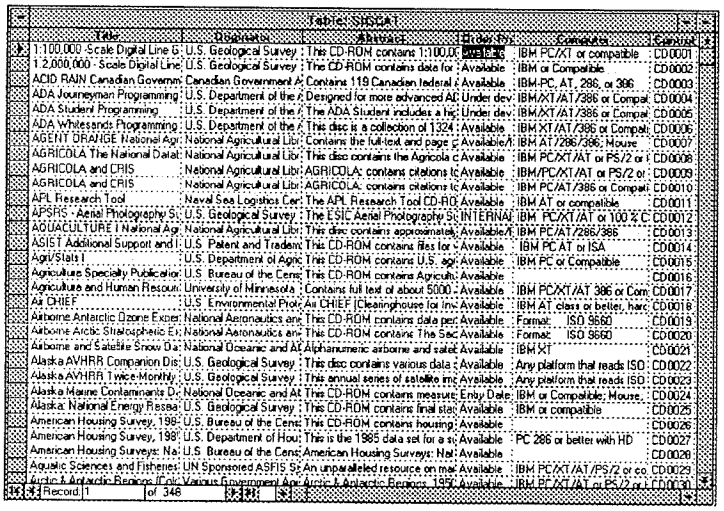


Table: SHSDA1

Title	Organization	Abstract	Order By	Computer	Control
1:100,000 -Scale Digital Line G	U.S. Geological Survey	This CD-ROM contains 1:100,00	Available	IBM PC/XT or compatible	CD0001
1:2,000,000 - Scale Digital Line	U.S. Geological Survey	The CD-ROM contains data for	Available	IBM or Compatible	CD0002
ACID RAIN Canadian Governm	Canadian Government A	Contains 119 Canadian federal a	Available	IBM-PC, AT, 286, or 386	CD0003
ADA Journeyman Programming	U.S. Department of the A	Designed for more advanced AD	Under dev	IBM/XT/AT/386 or Compat	CD0004
ADA Student Programming	U.S. Department of the A	The ADA Student includes a hig	Under dev	IBM/XT/AT/386 or Compat	CD0005
ADA Whitesands Programming	U.S. Department of the A	This disc is a collection of 1324	Available	IBM XT/AT/386 or Compat	CD0006
AGENT ORANGE National Agr	National Agricultural Libr	Contains the full-text and page c	Available/A	IBM AT/286/386; Mouse	CD0007
AGRICOLA The National Datat	National Agricultural Libr	This disc contains the Agricola c	Available	IBM PC/XT/AT or PS/2 or I	CD0008
AGRICOLA and CRIS	National Agricultural Libr	AGRICOLA: contains citations to	Available	IBM/PC/XT/AT or PS/2 or	CD0009
AGRICOLA and CRIS	National Agricultural Libr	AGRICOLA: contains citations to	Available	IBM PC/AT/386 or Compati	CD0010
APL Research Tool	Naval Sea Logistics Cer	The APL Research Tool CD-RO	Available	IBM AT or compatible	CD0011
APSRS - Aerial Photography S	U.S. Geological Survey	The ESIC Aerial Photography Sc	INTERNAL	IBM PC/XT/AT or 100 % C	CD0012
AQUACULTURE I National Agr	National Agricultural Libr	This disc contains approximately	Available/A	IBM PC/AT/286/386	CD0013
ASIST Additional Support and I	U.S. Patent and Tradem	This CD-ROM contains files for	Available	IBM PC AT or ISA	CD0014
Agri/Stats I	U.S. Department of Agric	This CD-ROM contains U.S. agri	Available	IBM PC or Compatible	CD0015
Agriculture Specialty Publicatio	U.S. Bureau of the Cens	This CD-ROM contains Agricult	Available		CD0016
Agriculture and Human Resour	University of Minnesota	Contains full text of about 5000	Available	IBM PC/XT/AT 386 or Com	CD0017
Air CHIEF	U.S. Environmental Prot	Air CHIEF (Clearinghouse for Inv	Available	IBM AT class or better, hard	CD0018
Airborne Antarctic Ozone Exper	National Aeronautics and	This CD-ROM contains data per	Available	Format: ISO 9660	CD0019
Airborne Arctic Stratospheric Ex	National Aeronautics and	This CD-ROM contains The Sec	Available	Format: ISO 9660	CD0020
Airborne and Satellite Snow Da	National Oceanic and At	Alphanumeric airborne and satel	Available	IBM XT	CD0021
Alaska AVHRR Companion Dis	U.S. Geological Survey	This disc contains various data s	Available	Any platform that reads ISO	CD0022
Alaska AVHRR Twice-Monthly	U.S. Geological Survey	This annual series of satellite ima	Available	Any platform that reads ISO	CD0023
Alaska Marine Contaminants Da	National Oceanic and At	The CD-ROM contains measure	Entry Date	IBM or Compatible; Mouse	CD0024
Alaska: National Energy Resou	U.S. Geological Survey	This CD-ROM contains final ste	Available	IBM or compatible	CD0025
American Housing Survey, 198	U.S. Bureau of the Cens	This CD-ROM contains housing	Available		CD0026
American Housing Survey, 198	U.S. Department of Hou	This is the 1985 data set for a s	Available	PC 286 or better with HD	CD0027
American Housing Surveys: Na	U.S. Bureau of the Cens	American Housing Surveys: Nat	Available		CD0028
Aquatic Sciences and Fisheries	UN Sponsored ASFIS Sy	An unparalleled resource on mat	Available	IBM PC/XT/AT/PS/2 or co	CD0029
Arctic & Antarctic Regions (Cdr	Various Government Age	Arctic & Antarctic Regions, 1950	Available	IBM PC/XT/AT or PS/2 or I	CD0030

Record: 1 of 348

By using the Government Information Locator Service directly, you are not constrained to browse for information in just the way that a particular provider designed for you. With GILS, it is as though we have all the stores in the shopping mall publish their full product inventories--the actual listings they themselves use to track what's on the shelves and in the warehouse.

Now, this kind of detailed product inventory information may be far more than most shoppers want. We fully expect that most of the public will continue to find information through specialized services and topical directories. In GILS, we call these diverse information providers "intermediaries".

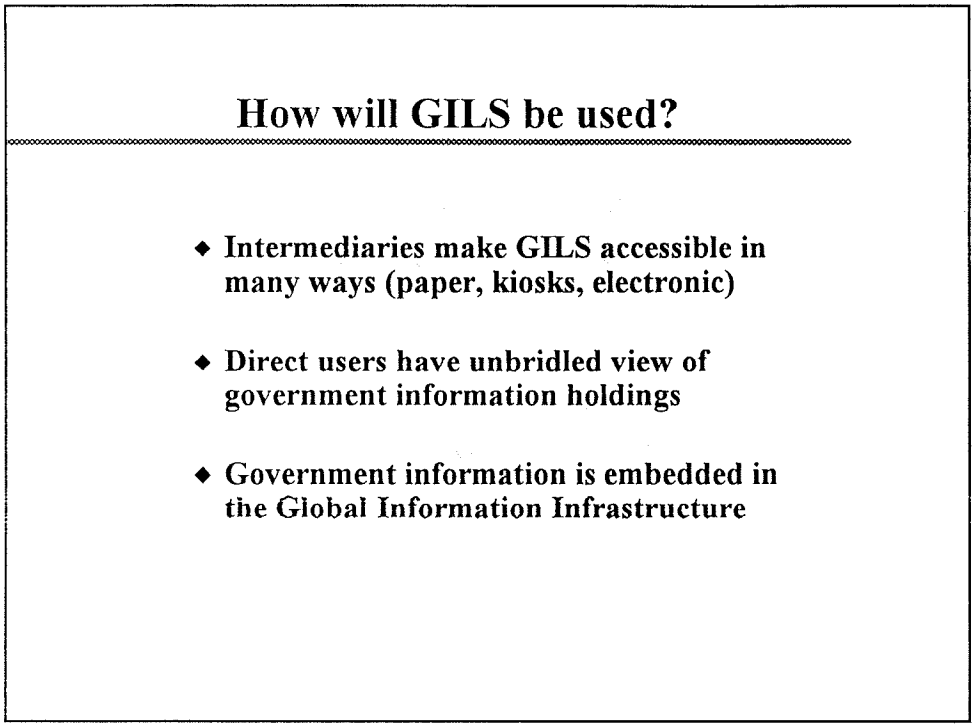
The role of intermediaries;

The role of Government

Intermediaries take many forms--they can be libraries, commercial firms, non-governmental organizations such as public interest groups, or agencies themselves. Although these intermediaries will be there to answer the vast majority of questions from the public, each intermediary is selective about what it presents. It is the job of these intermediaries to provide a very focused experience--to guide their community of interest to the information sources they need.

In contrast, GILS is a government-wide service. GILS specifies how the inventories of information products are to made searchable--it does not presume to organize the information resources in any one particular way.

This is a very powerful approach: By focusing on the underlying service rather than the way information is presented, GILS provides a level playing field and allows for a rich variety in how the information is packaged differently for different communities.



GILS then, is a service that makes is possible to search for information resources in ways that the actual providers may not have anticipated. GILS will be used by intermediaries so they can construct specialized services and topical directories for the particular clientele they serve. The services and directories provided by these intermediaries will take many forms--they may be seen in paper catalogs, CD-ROM's, kiosks, 800 number referral services, and bulletin boards systems, in addition to Internet services like the White House Interactive Citizens Handbook.

At the same time, anyone with access to the Internet can use GILS directly. In that case, the user can scan across huge volumes of inventory information, picking and choosing whatever is of interest. Especially exciting about GILS is that the direct user is not limited to just U.S. federal government holdings. Since GILS adopts the standards already in use among the largest libraries and information services worldwide, government information becomes just one aspect of a vast global continuum that includes information resources of all kinds.

GILS as an Element of the National Information Infrastructure and the Global Information Infrastructure

Paul Evan Peters
Executive Director,
Coalition for Networked Information

I'd like to introduce Paul Evan Peters, Executive Director of the Coalition for Networked Information. Paul will discuss "GILS as an Element of the National Information Infrastructure and the
Global Information Infrastructure."

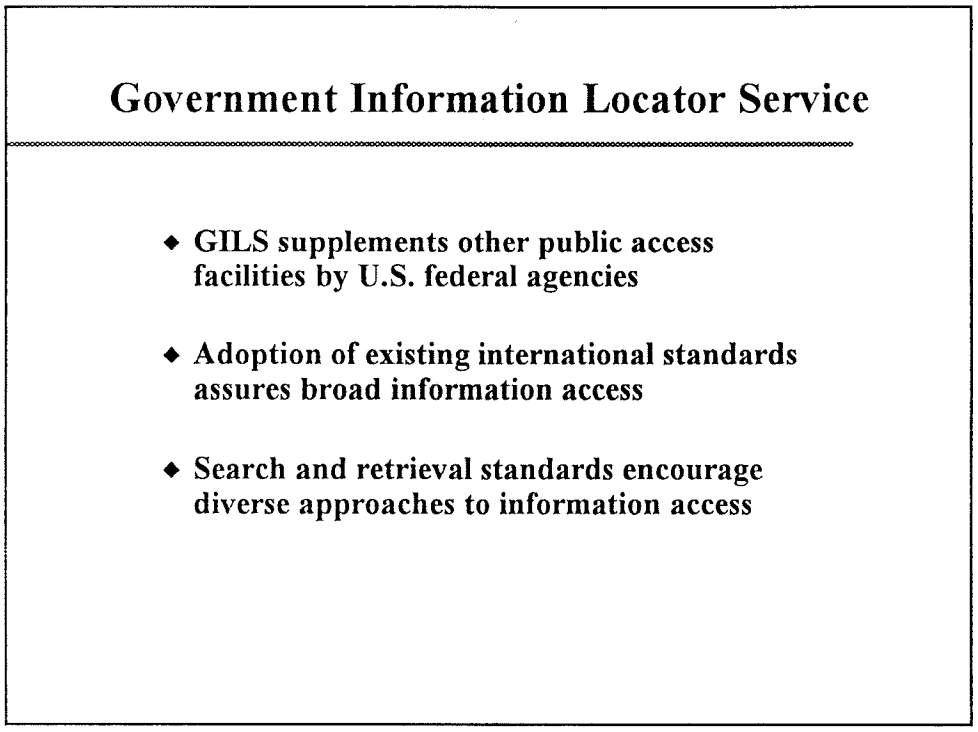
Government Information Locator Service (GILS) Demonstration

Eliot Christian

U.S. Geological Survey,
Department of the Interior

As a service, the policies and standards that comprise GILS are similar to a "building code"--you can visit a building that complies with the building code, but you can't walk into the "building code" itself.

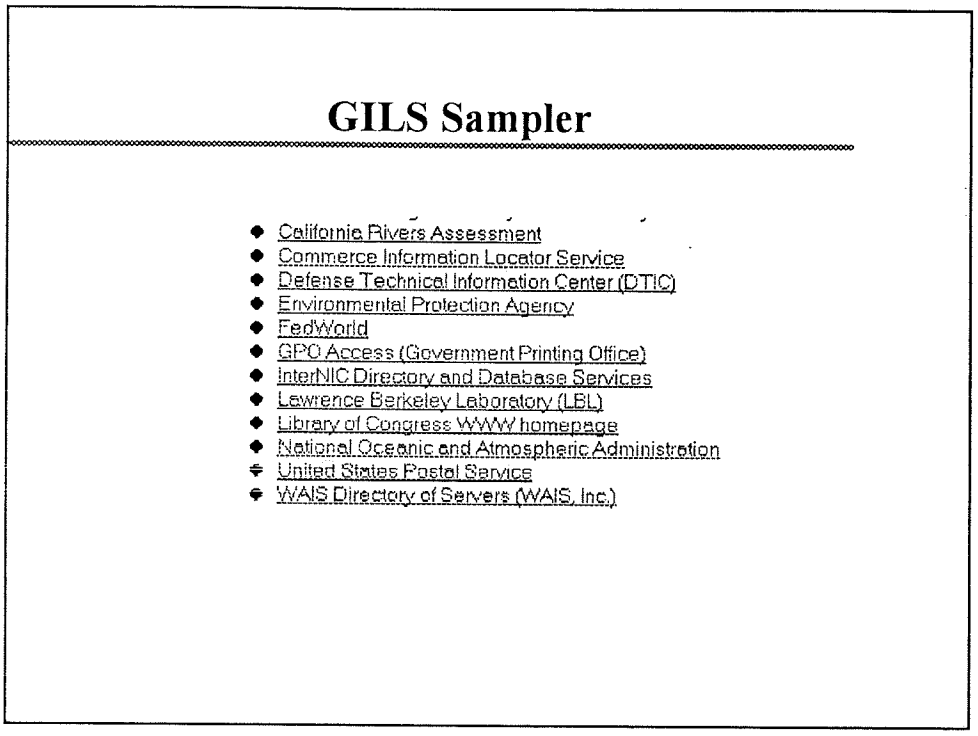
In the same way, to demonstrate GILS we'll be looking at approaches to finding GILS information directly that are possible with certain kinds of Internet software. We'll also look at how information services provided to the public by intermediaries can be enriched by having access to GILS-compliant sources.



All U.S. federal agencies will participate in GILS. This participation in GILS supplements, but does not replace, the many other facilities agencies maintain for public access to government information holdings.

By adopting existing international standards for information search and retrieval, GILS assures that direct users can have the broadest possible access to information. The standards adopted for GILS make minimal constraints on that access--information can be stored in many different ways, organized in many different ways, and presented to users in many different ways by intermediaries.

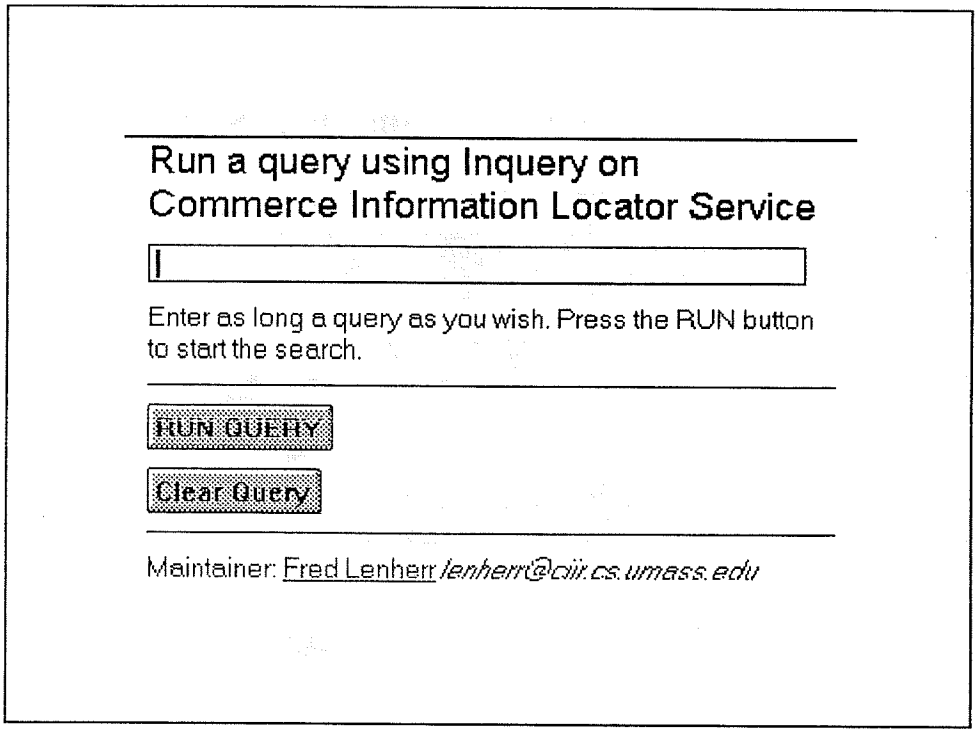
[Use Mosaic to go to "http://info.er.usgs.gov/gils/gils"]



These are just a few of the locators that are already adopting GILS. We'll choose the Commerce Information Locator Service to see an example of an agency that is a very active intermediary promoting public access to government information.

[Click on "Commerce Information Locator Service"]

We had intended to run this demonstration live, but in moving to this large auditorium, we lost our ability to do a good projection from my PC. We do have a couple of PC's set up down here in front, and you're welcome to come down after the presentations if you want to see some of this in actual operation.

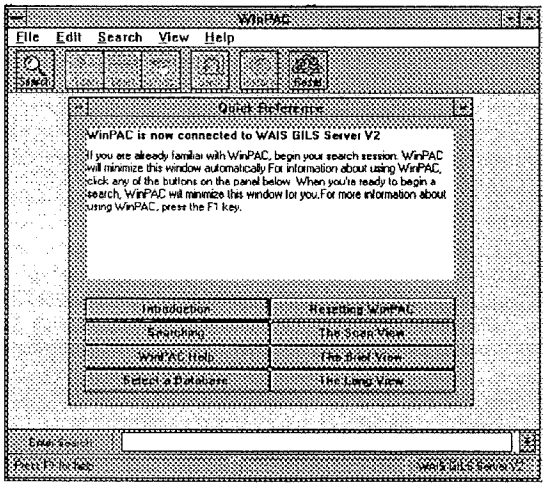


Within the Commerce Information Locator Service we can search for information across many component organizations that otherwise would not have a common interface for public access.

This implementation uses network server software called "Inquery" but if the server is GILS-compliant, users have a variety of software that can access it.

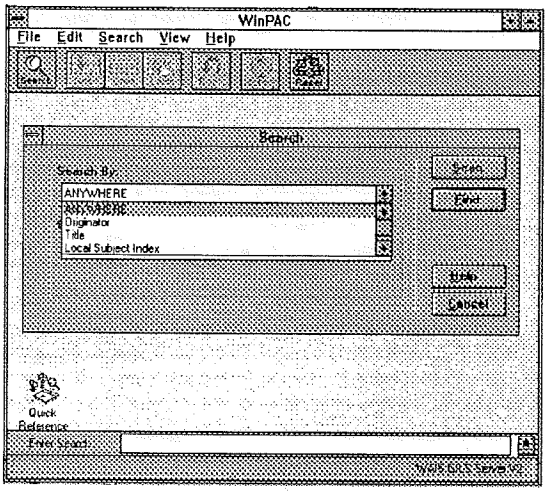
For example, Ameritech Library Services offers sophisticated network software for Microsoft Windows called "WinPAC". This software has features needed by professional librarians, and implements advanced features of the Z39.50 search and retrieval standard.

Z39.50 Client to GILS-compliant Server



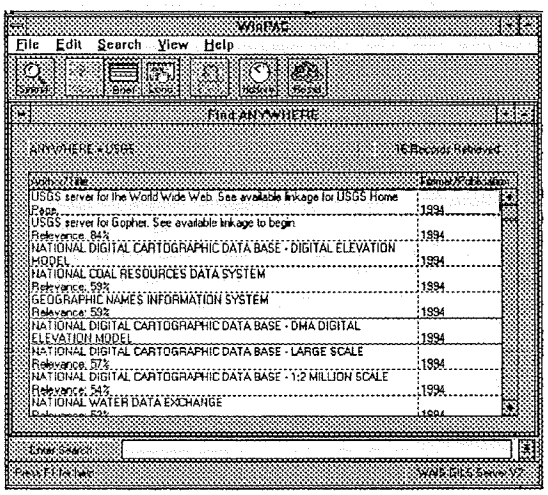
In this particular case, we're using WinPAC to access a GILS-compliant server using the commercial version of Wide Area Information Servers (WAIS) from WAIS, Incorporated.

Search by GILS Core Elements



Here, the software has recognized that this particular server is offering records that can be searched by fields, including the GILS Core Elements. For now, we'll choose to find the term "USGS" anywhere in the record rather than constraining the search to just certain fields.

GILS Locator Records in Relevance Order

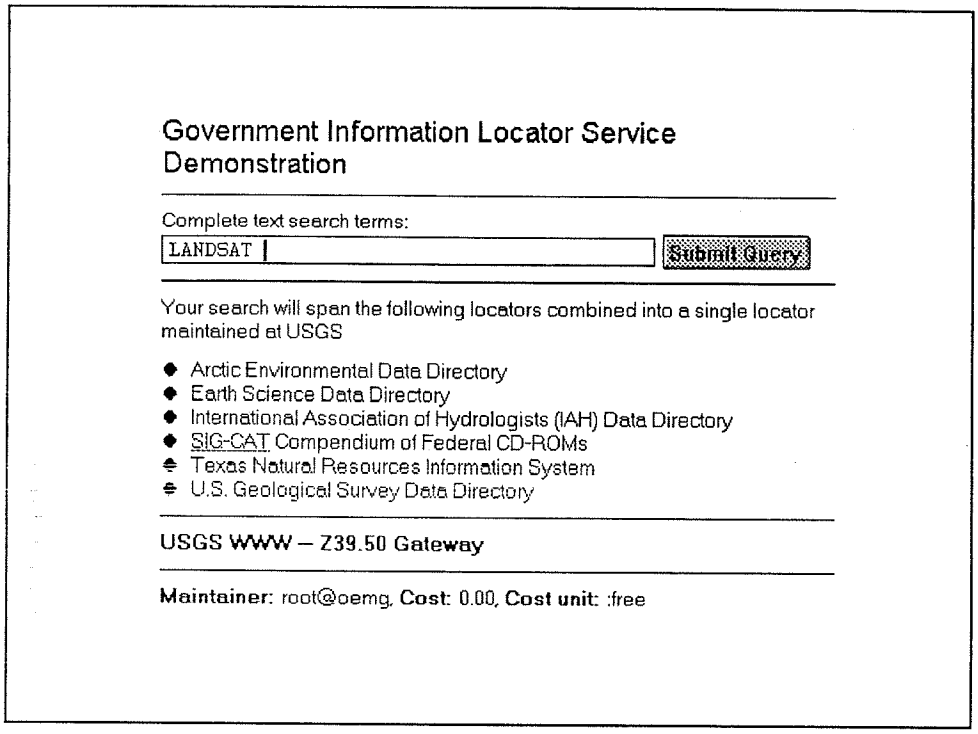


The search results first in a listing of the titles of the records that contain the term. You then select the records of interest to see the full contents.

As a service definition, GILS specifies how agencies can have a common approach for the public to find information. But, even more importantly, GILS allows Federal government information to be intermixed with other government and non-government resources.

[Go back to "GILS Demonstration" page]

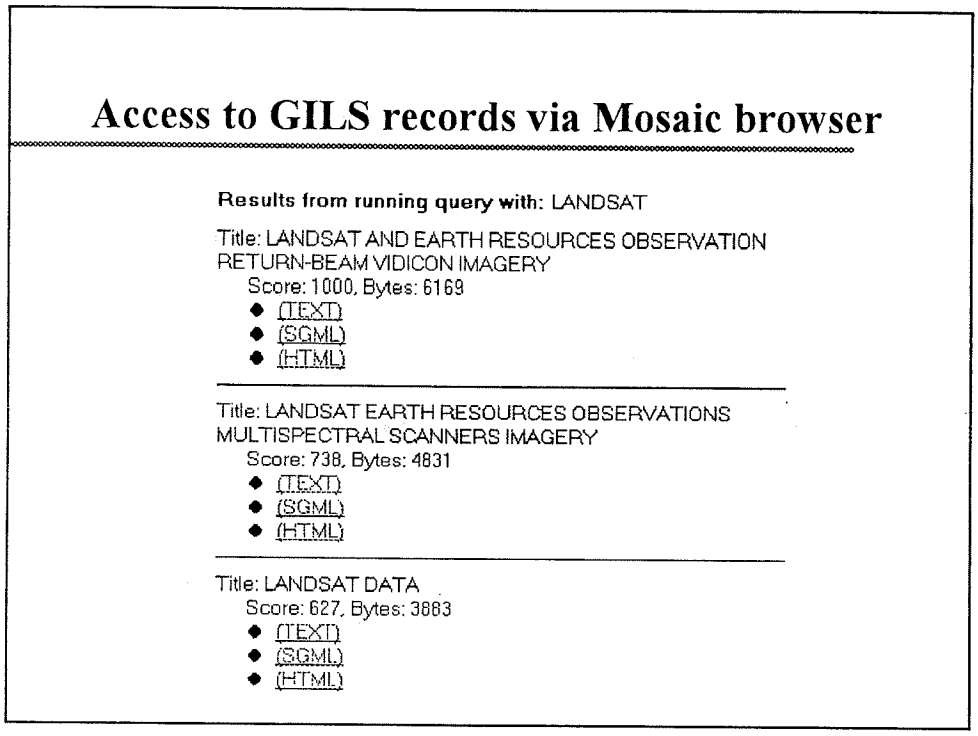
[Click on "Search across multiple sources"]



Here's one example of searching across six different GILS locators that could be maintained by five separate organizations around the world: the Arctic Research Policy Committee,, the International Association of Hydrologists, the Special Interest Group on CD-ROM Applications and Technology, the State of Texas, and the U.S. Geological Survey

[Type in "LANDSAT" as search term]

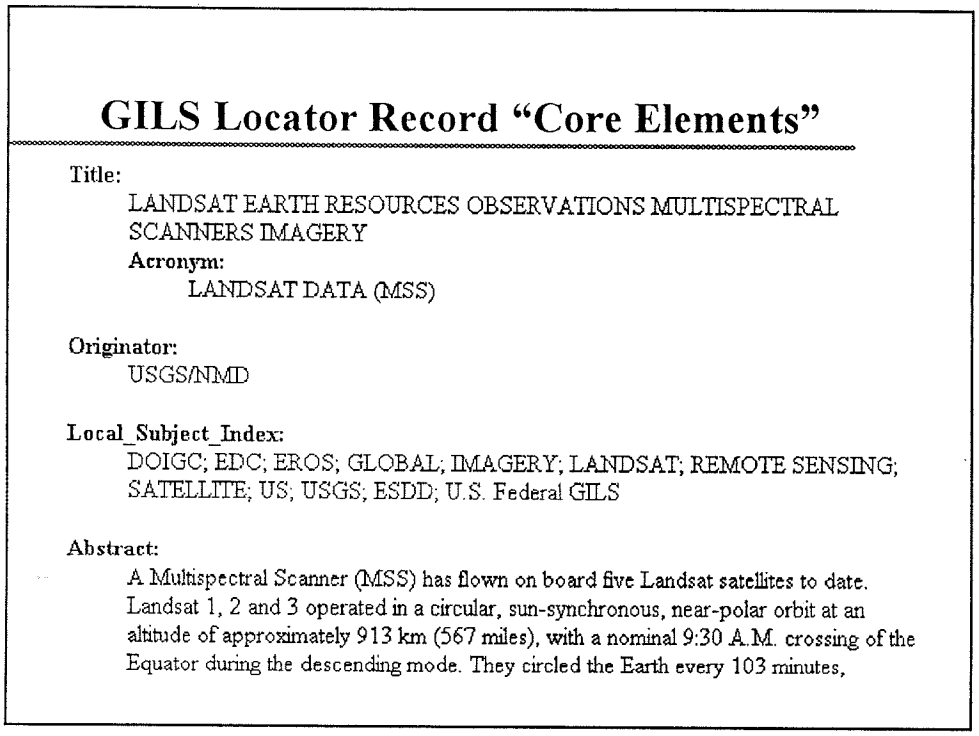
For this demonstration, we'll enter the word "*LANDSAT*" to search for satellite pictures we might need for an environmental project at school.



The search returns a list of locator records that refer to sources relevant to "Landsat." Let's choose one and see what the locator record looks like.

[In second entry, LANDSAT EARTH RESOURCES OBSERVATIONS MULTI-SPECTRAL SCANNERS IMAGERY, Click on "HTML"]

[When record is returned, position to top of record]



GILS Locator Record "Core Elements"

Title:
LANDSAT EARTH RESOURCES OBSERVATIONS MULTISPECTRAL SCANNERS IMAGERY
Acronym:
LANDSAT DATA (MSS)

Originator:
USGS/NMD

Local_Subject_Index:
DOIGC; EDC; EROS; GLOBAL; IMAGERY; LANDSAT; REMOTE SENSING; SATELLITE; US; USGS; ESDD; U.S. Federal GILS

Abstract:
A Multispectral Scanner (MSS) has flown on board five Landsat satellites to date. Landsat 1, 2 and 3 operated in a circular, sun-synchronous, near-polar orbit at an altitude of approximately 913 km (567 miles), with a nominal 9:30 A.M. crossing of the Equator during the descending mode. They circled the Earth every 103 minutes,

In this GILS locator record, we find a description of the USGS Landsat archives at the EROS Data Center in Sioux Falls, South Dakota.

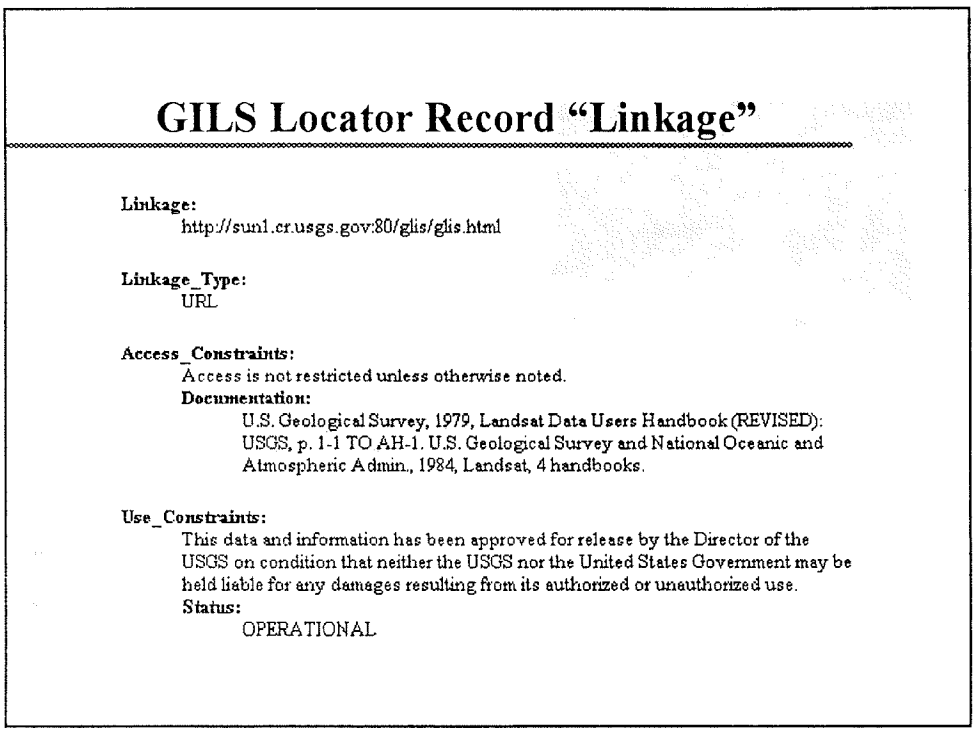
The GILS locator record includes a number of required "elements"--fields like "title", "originator", and "abstract". In this particular record, we also see that there is an element called "acronym". "Acronym" is not a well-known GILS Core Element; in GILS, other fields are simply handled as locally defined elements.

[Scroll down to "Availability"]

Availability:
Distributor:
Name:
USGS/NMD
Organization:
USGS/NMD
Street_Address:
EROS DATA CENTER, U.S. GEOLOGICAL SURVEY
City:
SIOUX FALLS
State:
SD
Zip_Code:
57198
Country:
USA
Telephone:
(605) 594-6151
Fax:
(605)594-6589
Resource_Description:
LANDSAT EARTH RESOURCES OBSERVATIONS MULTISPECTRAL SCANNERS IMAGERY
Order_Process:
To place orders, obtain additional information, technical details, ancillary products, and pricing schedules regarding products and services, or international data holdings contact the EROS Data Center, Customer Services Section.

The order process for obtaining the referenced information is described within the GILS locator record.

[Scroll down to "Linkage"]



In addition to the text description of the order process, there are elements that describe any access constraints or use constraints for the referenced information resource.

In this particular case, we see that the locator record contains an "electronic linkage" element.

[Click on link in linkage element.]

When we click on this linkage field, we are connected directly to the referenced resource--the Global Land Information System.

Global Land Information System

This information is preliminary and is provided with the understanding that it is not guaranteed to be correct or complete. Conclusions drawn from this information are the responsibility of the user.

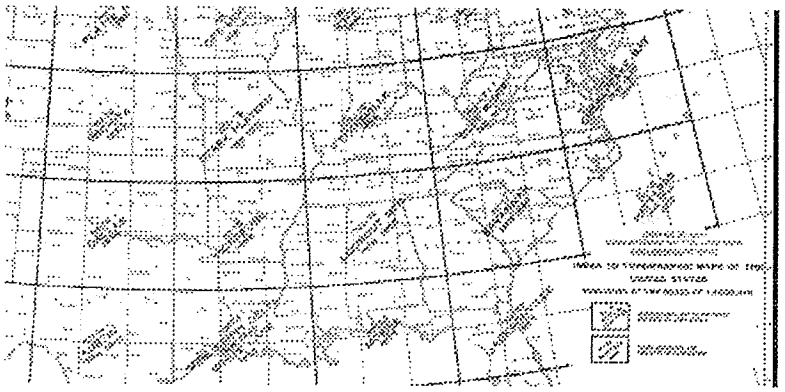
The Global Land Information System (GLIS) is an interactive computer system developed by the U.S. Geological Survey (USGS) for scientists seeking sources of information about the Earth's land surfaces. GLIS contains metadata that is, descriptive information about data sets. Through GLIS, scientists can evaluate data sets, determine their availability, and place online requests for products. GLIS is more than a mere list of products. It offers online samples of earth science data that may be ordered through the system.

Now, we can browse through actual Landsat pictures or order high resolution copies online.

We can also choose to search for information by just clicking on a map.

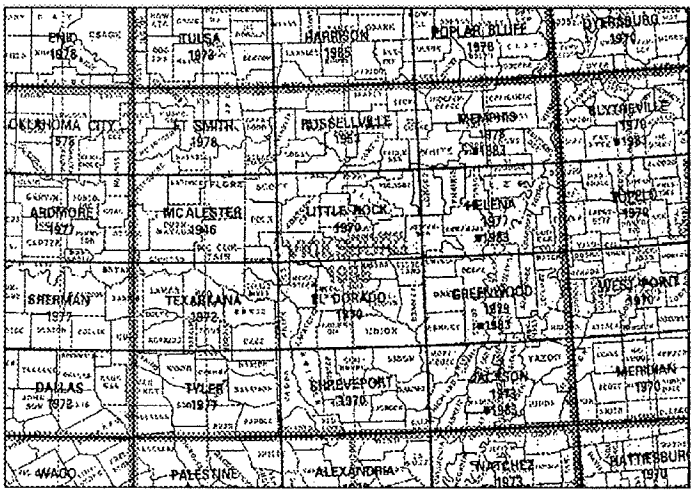
[Go to Spatial Searching via GLIS.]

Looking for a map



This is a map that serves as an index to other maps. We'll choose Arkansas..
[Click on "Vicksburg"]

Looking for a map



And here we can get a more detailed view to focus in on our area of interest.

Everyone needs to find information that is referenced to places on the Earth--whether using a highway map or evaluating the best place to put a new factory. Because of its traditional leadership role in this area, the Federal government is helping to create a National Spatial Data Infrastructure.

National Spatial Data Infrastructure

Goal: to make it easy for people to find and use geo-referenced information (federal, state, county, public utility, commercial, etc.)

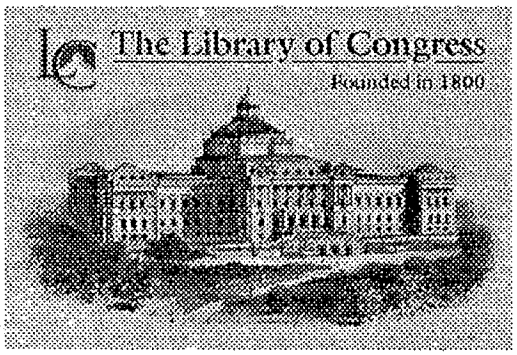
- **Federal Geographic Data Committee leadership**
- **Standards (Spatial Data Transfer Standard, Content Standard for Geospatial Metadata)**
- **GILS-compliant "Spatial Data Clearinghouse"**

A critical component of the National Spatial Data Infrastructure is the clearinghouse--a locator for geo-referenced data and information. This clearinghouse will be fully compliant with GILS.

The ability to generalize searching to other patterns, such as places on the Earth, makes for a very powerful approach to information access. We have only begun to imagine how these new kinds of searching can be applied to the exploration of knowledge.

The international standards adopted by GILS have been developed primarily by the library and information services community. A direct user of GILS therefore has immediate access to huge amounts of electronic information already available through the world's great library collections. As just one example, we'll take a quick look at the resources made available through the Library of Congress.

[Go to "Library of Congress" WWW home page]



About the Library of Congress World Wide Web

Exhibits (Recent Selections from Library of Congress Exhibits)

American Memory (Selected Collections from the Library of Congress)

Country Studies (Area Handbooks)

POW/MIA Database (Federal Research Division)

Global Electronic Library (Other World Wide Web Resources by Subject)

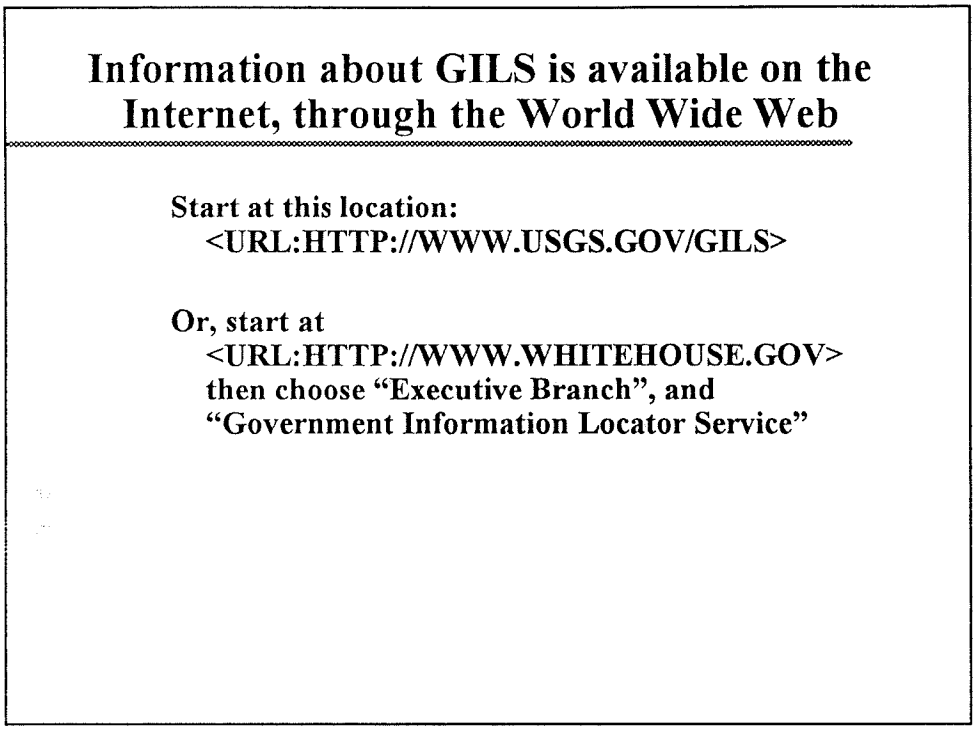
LC MARVEL (Gopher-based Campus-Wide Information System)

LOCIS (Search Online Catalogs and Databases)

The success of GILS doesn't depend on massive government investments or sweeping policy changes. Rather, by adopting existing international information standards, GILS builds on the efforts of talented people worldwide already working on information access issues.

In addition to the services that will be offered by intermediaries, free public domain software for direct user access to GILS locators will be available from many sources--as will software to support the publishing of GILS-compliant locators on international networks.

With active research worldwide and public demand for better access mechanisms, GILS will evolve to take advantage of new insights into how best to help the public find and retrieve the most relevant information out of the vast electronic resources that continue to expand explosively .



Information about GILS is available on the Internet, through the World Wide Web

Start at this location:
<URL:HTTP://WWW.USGS.GOV/GILS>

Or, start at <URL:HTTP://WWW.WHITEHOUSE.GOV>
then choose "Executive Branch", and "Government Information Locator Service"